

# The Loosest Slots in Town



*By LCdr. Jerry Stokes*

**W**e were recalled early from an uneventful AEW mission. As CATCC vectored us for descent to a night approach, we ticked off the approach checks. Juggling the checklists and dumping fuel, we kept in step with the Hummer dance as several cloud layers disappeared above us in darkness. We weren't sure if we could squeeze off the gas in time, so we slowed through gear speed to dirty-up at six miles.

The gear and flap indicator came alive. I covered the gear-handle light with my hand, then watched the wheel symbols appear like slot-machine fruit in the gauge. I glanced at

the altimeter to back up the pilot, then looked at the gear indicator, expecting the Goodyear jackpot. Instead, the right main gear remained barber-poled, while the eerie red glow of the gear handle continued to light the cockpit. I waited another second and looked again at the gauge, then to the AOA indexers, which were dark. The gear-handle light continued to burn brightly. The pilot secured the fuel dumps slightly above max trap, as I advised approach we had a gear malfunction and requested a rep.

The aircraft had a long history of barber-poled indications with the right main gear and had been drop-checked several times over the previous

months. Each successive drop-check involved increasingly intense searches for causes. Findings included worn wires, slightly misaligned switches, and bent contacts. These problems quickly were repaired. Drop-checks were completed, and the discrepancy was signed off each time.

I had had a right main barber-pole in the aircraft on the beach a few weeks earlier. I checked the hydraulic pressure and the gear and flap gauge, applied positive and negative acceleration, and tried to yaw the aircraft—still with no down indication. I even cycled the landing gear. On that occasion, the gear went up and locked, then came down with a good down-and-locked indication. I talked with other pilots in the squadron who had the same experience with the aircraft, and, in every instance, cycling the gear provided a positive down-and-locked indication.

We continued upwind in the darkness, checking hydraulic pressures and the gear-indicator gauge, as the CICO pulled up dirty-bingo numbers to the beach—160 miles to the west. Our rep came up as the pilot began to apply G and yaw to the aircraft. Horsing the aircraft around on downwind, however, failed to clear the barber-pole. We agreed with the rep to cycle the gear handle.

Fully expecting the gear indication to clear itself, I stared in disbelief as the pilot raised the gear handle. The gear-handle light remained bright red, and the gear indicator continued to show left main and nose gear down-and-locked with a barber-pole on the right main. The CICO confirmed the right main still appeared down-and-locked, and the pilot saw the left main still reflecting the anti-collision strobe. I reached over and gave the gear handle a forceful shove to make sure it was up all the

way. The warm fuzzy feeling that I was dealing with a familiar problem began to vanish. In every previous incident, I had suspected a switch or indicator problem. Now, I wondered about some kind of structural or mechanical problem.

After again consulting the PCL, we reasoned the ultimate goal was to get three gear down-and-locked. Lowering the gear handle again would get us closer to that goal, and it couldn't make matters any worse. After lowering the gear handle, the red light continued to burn, the indexers remained dark, and the gear gauge continued to indicate down for the left and nose gear and barber-pole for the right main.

The CICO reported the right main-gear assembly seemed to move slightly toward the typical down-and-locked alignment. We looked at our fuel and now were within 500 pounds of our calculated dirty-bingo state. The acceleration and G application with the gear down had eaten into our reserve faster than we anticipated. We referenced the PCL and then accelerated to provide additional airflow to force the right main gear, while the pilot actuated the blow-down handle on the emergency gear—nothing happened. The CICO reported no change in gear-linkage geometry, and our indications remained the same in the cockpit.

I advised the rep of our negative results and flipped to the emergency-action matrix for the landing gear to prepare for a “One Main Gear Unsafe or Up” landing. Since we had a suitable divert field with arresting gear, and I wanted to forgo any possibility of a gear strut collapsing during rollout on the CV, I advised approach I was within five minutes of bingo fuel. I also said we were climbing toward the divert. I discussed our intentions with the rep, and the CICO alerted the divert field we were inbound for an arrested landing.

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I read aloud the procedures outlined in the PCL as we climbed into a 40-knot headwind. We already had dumped or burned as much gas as possible to reduce our weight. The hook was down, and we were en route to a field arrestment.

The major topic of discussion was whether to secure the right engine before landing. My first response was a definite “yes.” Normally, I would have considered the possibility of engine failure very remote, but our squadron had experienced two non-mitigated, first-stage-compressor failures the previous month. I had aborted a CQ mission two weeks earlier when my left engine gave up the ghost. The question we posed was, “Which is the smaller risk: collapsing the right landing gear and inflicting severe FOD damage from a spinning prop, or losing the left non-mitigated engine after shutting down the right engine for approach?”

I asked for inputs from each crew member, as we coordinated with the divert field and completed a front-seat swap. We decided that, given the indications, the risk of the main gear collapsing was greater than the left engine turbine failing during the final few moments of our approach. I elected to secure the right engine on short final, just before the arrestment.


The copilot asked for intentions if we missed the wire. We briefed an aborted-takeoff scenario for a single engine to remain on the runway. If the gear withstood the touchdown, it should hold for the rollout. I didn’t want to load it and then go around for a second touchdown.

As the lights of the city broke through the low cloud layers, we maneuvered to intercept a five-mile final. At three miles, I adjusted the power levers and asked the copilot to secure the right engine. The 12,000-foot runway had a significant upslope for the first 3,000 feet, then fell off into a downward slope. The VASI indicated we were way above glide slope. I reduced power to increase the descent rate, as we scanned the haze for arresting-gear markers. We had referenced the IFR Supplement and knew the gear was 2,000 feet from the approach end, and we wanted to touch down just before the gear to avoid a lengthy rollout.

The problem was that the camel-like, 12,000-foot runway appeared very different from the flat 8,000-foot runway we were used to seeing. We tried to estimate 2,000 feet based on total runway presentation but couldn’t break out any distinguishing arresting-gear markers. At a half-mile, we saw a set of white lights that looked slightly out of alignment with the runway-remaining markers. A second later, it became obvious the lights were arresting-gear markers. I wondered if we would get down in time, as I balanced the need to increase our descent rate with the need to touch down lightly. We settled into ground effect a few hundred feet before the gear, and I cushioned the landing with a bit of power.

We felt the tug of the arresting gear a split second after touchdown. The right main gear held, and we wallowed to a stop. The gear indicator still showed a barber-pole for the right main. Basking in the lights of six Air Force crash trucks, we asked tower if the CICO could exit the aircraft and pin the right main. As the CICO applied the right main-gear lock, the gear indicator changed to down-and-locked. The CICO returned, we cleared the wire, and taxied off the active runway.

We learned several things that night. We defined the point at which our malfunction turned from a nuisance to a safety-of-flight degradation that required emergency action. As soon as the gear failed to retract when we tried to cycle it, we knew we had a different or, at least, a bigger problem than in previous incidents. We were in uncharted territory and sought out the most conservative response. We also recognized when to say “when.” Additional time to troubleshoot and explore options would have been nice, but the fuel gauge dictated timely action. We made a decision to go to the beach and executed without hesitation.

We took advantage of our cockpit resources. Each member of my crew, regardless of their experience or seniority, had valuable input for the decision-making process. The discussion of mitigated engines and the suggestion to look up the arresting-gear location at an unfamiliar field were critical. Sometimes, posing a question may be enough to expose hidden hazards or smarter options that minimize risk. 

LCdr. Stokes flies with VAW-115.